



RS232 • Ethernet • Wireless 802.11b Ethernet • USB • 4-20mA • RS485 • Fiber Optic

## RS232 Communication Applications and Options

### OVERVIEW

RS232 is the most commonly used and economical communication interface for sending scale data to another device including printers, PCs, remote displays and PLC controllers. Doran includes RS232 as a *standard feature in all of our products.*

### INSTALLATION

For washdown applications, the optional RS232 cable is passed through a bulkhead mounted watertight fitting to retain washdown protection. RS232 communications is a simple communications standard requiring a single cable with three conductors, one each for TXD – Transmit, RXD – Receive and GND – Signal Ground. The maximum length for a cable run is 50 feet, which may be reduced based on electrical and RF noise present in the application environment.

When using RS232, the correct interface cable is necessary for communication between scale and the other device. Most serial devices utilize a 9-pin D style connector. When connecting to the desired device, polarity of the connector on the receiving device (male or female) should be identified before ordering the cable. See the next page for a photo of the connectors available.

It is important to determine how the external device will need to receive the scale data. Available communication settings are:

- Transmit on Demand – The scale transmits data to the external device each time the PRINT button is pressed. This is typically used for manual operations like sending data to a barcode label printer as a product is weighed and then labeled.
- Continuous Transmission – In the continuous mode, each displayed weight is transmitted to the external device. A constant update of the weight on the scale is required for data collection or system control applications. In these applications, the real time weight data is logged to a data collection program like Doran's Excelsator or used by a PLC for system control.
- Auto Transmit – This allows for automatic transmission of scale weight data when a stable weight registers on the scale. Once the weight data is transmitted, the scale will not transmit again until the weight is removed from the scale. This allows the user to concentrate on the product, while data is automatically transmitted to a PC data collection program like Doran's Excelsator or a barcode label printer.

## APPLICATIONS

### Labeling boxes for palletizing and printing a total pallet weight label

In this application, the scale will be configured for an automatic print. When each box to be packaged together on a pallet is placed on the scale, the weight data is sent to a label barcode printer and added to the weight accumulator automatically when a stable weight is achieved. The printed label is applied to each individual box, with weight, date, barcode label, custom graphics and a description of the contents. Once the entire pallet is ready for shipment, a total weight label can be printed that contains the weight and count of each box weighed and placed on the pallet for use in the shipment bill of lading and inventory control.

### Using a personal computer to log weight data to an Excel spreadsheet

Weight data can be sent to a computer using the standard RS232 feature, along with an optional serial cable. This allows for the automated recording of real time production data. Manual recording of weight data to a paper log can be time consuming and error prone as data points can be missed. Also, typing data into a spreadsheet at a later time relies on the correct interpretation of handwritten data. Automated data acquisition is easily implemented with Doran's [Excelerator Data Collection Software](#). Once Excelerator is configured, all transmitted weight data, units and product ID, is automatically inserted into a Microsoft Excel spreadsheet. Other data points can be added automatically like, time and date, allowing data to be immediately examined using statistics and user defined graphs. All this information can be archived for later analysis, billing information or historical records.

## AVAILABILITY AND ORDERING INSTRUCTIONS

Although RS-232 Communications is a standard feature in Doran Scales, an optional cable is required to connect the scale to the external device. Doran offers the following serial data communications options:

**EXOPT118:** RS-232 Serial Data Output, with shielded cable, 10-ft. pigtail ends.

**EXOPT119:** RS-232 Serial Data Output, with shielded cable, 10-ft. with 9 pin FEMALE "D" connector. Typically used for a Scale to PC connection.

**EXOPT148:** RS-232 Serial Data Output, with shielded cable, 10-ft. with 9 pin MALE "D" connector. Typically used for a Scale to printer connection.

**SFT001: Excelerator Data Collections Software:** A powerful, easy to use, and cost effective software solution designed to collect data from any Doran Scale and transfer it to a Microsoft Excel spreadsheet. Visit <http://www.doranscales.com/data-collection-software.htm> for more information on Doran's Excelerator Data Collection Software.

**EXOPT114: Remote Display :** A six digit .56" high red LED display mounted in an IP54 rated plastic housing with 10 feet of cable. The housing includes wall mount tabs on the sides of the case. Dimensions: 7" w x 3" h x 2" d



Pictured Top: Female 9 Pin D-Sub Connector      Pictured Bottom: Male 9 Pin D-Sub Connector